older patients with moderate perceived skin excess. Only fat is resected through a division of the conjunctiva and capsulopalpebral fascia of the everted lower lid; however, it appears that the change in contour of the skin of the lower lid uses up the apparent excess. The result is a smooth lower eyelid without bagging. Although transconjunctival blepharoplasty has gained in popularity in the past several years and is thought by some to prevent the occurrence of lower eyelid ectropion, reports are starting to surface of complications including ectropion, entropion, and diplopia. Some surgeons are starting to combine transconjunctival blepharoplasty with a chemical peel of the eyelid skin to correct fine wrinkling. For a lax lower eyelid that may be prone to retraction postoperatively, numerous procedures to fix the lateral canthus or lateral tarsal border of the lower eyelid to the lateral orbit have substantially improved surgical results. Tarsal suspension or fixation procedures are also gaining acceptance to improve results in lower eyelids with normal tone. No evidence currently exists to support a benefit of laser blepharoplasty over conventional techniques.

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Coverage of Burn Wounds

CLOSURE OF THERMALLY injured wound beds remains the main challenge of a pediatric burn team because a patient's survival depends on successful wound closure using viable, permanent skin. Burns of as much as 40% of the total body surface area can be easily covered with sheet or meshed autografts in a set of serial excisions and grafting procedures. Injuries covering as much as 70% of the total body surface area usually require the addition of a temporary skin coverage material while waiting for donor sites to repopulate or for deep dermal areas to epithelize. Traditionally these temporary materials have included porcine xenograft, cadaveric allograft, and biosynthetic material, each of which has various disadvantages, such as expense, short shelf life, and viral disease transmission.

Closing the extensive wounds of patients with burns of greater than 70% of their total body surface area is problematic. It now appears that the use of cultured skin grafts is feasible for the timely closure of wounds in patients with massive burns.

When a patient is admitted to the burn unit, a sterile skin biopsy is taken from an unburned area of skin and transported to a skin bank. Many burn centers are affiliated with a local skin bank, and others use commercial companies to grow skin. The skin is then processed by a variety of tissue culture techniques until the desired quantity of skin is grown in culture flasks. As much as a 10,000-fold increase in skin can be grown from a single 2-cm^2 biopsy specimen over about three weeks. During this time the patient undergoes serial debridements and, where possible, coverage of the wound with repeated harvesting of available autogenous tissue. Cadaveric or synthetic skin is then used to cover the remaining areas until the cultured skin is ready.

When the patient is stable and the wound bed is noninfected, the cultured skin is transferred to the patient and placed on the wound bed in a manner similar to autograft placement. Postoperative nursing care is slightly more intensive, requiring the patient to be kept sedated, and may even delay a return to normal rehabilitation activities. The rate of "take" of the skin grafts in part varies with the familiarity of the surgical and nursing staff with the technique but is reported to be nearly 80% under ideal conditions.

Unfortunately, there are still many problems associated with this grafting technique. When the cultured cells consist of only epidermis, the graft is thin and fragile. If it is not placed onto a dermal bed, it has not been shown to form rete pegs, anchoring fibrils, or a basement membrane, and patients have problems with increased fragility, blister formation, and shear. This has necessitated repeated grafting with either more cultured skin or autologous tissue. The cultured skin seems to be hardier when it is placed onto a dermal bed, either an unexcised dermal wound base or an allograft dermal base that has been previously placed on the wound bed and allowed to vascularize.

Substantial cost is associated with this technique (between $1,000 and $9,000 per each percentage of body surface area covered), and the length of hospital stay is increased. Long-term results with scarring are still undergoing evaluation. Research on this technique is ongoing, and cultured skin grafting will eventually become routine as another method for achieving timely wound closure for patients with massive burns.

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Wrist Pain

WRIST PAIN is a challenging diagnostic dilemma. Most patients with wrist pain come to a hand surgeon after a series of failed conservative measures and a battery of unrevealing studies.